

view of Gani (Computer and Control Engineering Journal 1995) (hereinafter Gani). Claims 10-14 and 18-22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Lawson in view of McCreery et al., U.S. Patent No. 5,787,253 (hereinafter McCreery). Claims 28-36 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Lawson in view of Gani, and further in view of McCreery. Claims 35-36 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Lawson, Gani and McCreery in view of Stupek, U.S. Patent No. 6,131,118 (hereinafter Stupek). Claims 37-43 were rejected under 35 U.S.C. § 102(e) as being anticipated by Davies, U.S. Patent No. 6,058,420 (hereinafter Davies). By the present amendment, claim 9 has been canceled, claims 1-2, 5, 10, 13-15, 23, 26 and 37 have been amended, and the rejections traversed in view of the following remarks. Reconsideration is respectfully requested.

The present invention is generally directed to a network connectivity and other system event notification publisher for use by applications and the like, such as applications designed for use by mobile computer users. To this end, an event monitoring and notification service monitors for certain states with respect to a computer system, and publishes events on state changes. These system states correspond to one or more classes of system events, including LAN connectivity, TCP/IP network events, such as the status of a TCP/IP network connection or the quality of the connection, user logon events, and power events related to battery and AC power states. Other system state change events such as plug-and-play type events may also be published. Based on an event, the application or other component can adapt to the state change and modify its behavior in some manner. For example, an application can change its mode of operation when a

network connection is lost, automatically save a user's files when a battery powered device is getting low, or perform some pre-logoff processing after the user has requested logoff but before an actual logoff operation occurs.

The monitoring service and notification publisher that handles these system state changes is generally referred to as a System Event Notification Service, or SENS. SENS may work with a loosely coupled events (LCE) system that includes an event class object that matches event publishers with event subscribers, wherein the publishers and subscribers that do not necessarily have knowledge of one another in advance. To this end, event information from different publishers is stored in an event store, and subscribers query this store to select the events about which they want information. Selecting event information from the event store creates a subscription. When an event occurs, the event system checks this database to find the interested subscribers, creates a new object of each interested class, and calls a method on that object. Note that the above description is for informational purposes only, and should not be used to interpret the claims, which are discussed below.

The Office action rejected claim 1 and 4 (as well as claim 9, now canceled) under 35 U.S.C. § 102(e) as being anticipated by Lawson. However, each of these claims essentially recite monitoring for a system state change related to network connectivity, and firing an event in response to a network connection being established. In contrast to the claims, Lawson never teaches or even suggests anything but a network that is always connected, and thus fails to disclose or even suggest any resembling such monitoring or firing of such an event. In fact, a thorough reading of Lawson in its entirety fails to

provide any indication that Lawson even contemplates network failure and/or establishment of a network connection, and thus there is no disclosure or suggestion in Lawson as to how such a state change could be monitored for, how and when such an event might be generated, and so forth. Indeed, the Office action's rejection of claim 9 clearly supports applicants' position that the very essence of Lawson is predicated on a continuous connection to a network, as the passage (col. 15, line 66 to col.16, line 2) and figure references (Fig.2, parts 24, 32 and 26) of Lawson cited in the rejection of claim 9 are directed to exchanging event information over a network.

Anticipation under 35 U.S.C. § 102 requires the disclosure in a single prior art reference of each and every element of the claim under consideration, and each element must be arranged as in the claim. Lawson does not teach or suggest monitoring for network connectivity state changes, nor firing an event when a network connection is established, as essentially recited in claims 1 and 4. For at least the above reasons, Lawson fails to meet the requirements for supporting a §102 rejection of these claims, and applicants respectfully request reconsideration and withdrawal of the rejections of claims 1 and 4 based on Lawson.

The Office action also rejected dependent claims 3 and 6-8 under 35 U.S.C. §103(a) as being unpatentable over Lawson. However, for at least the reasons set forth above with respect to claim 1, these claims are patentable over the prior art of record, including Lawson. In addition, these claims recite further patentable subject matter over Lawson. For example, in making the 35 U.S.C. § 103(a) rejection of claim 3, the Office action concedes that Lawson fails to disclose that "the notification includes activating,

starting or running a program or script,” but nonetheless contends without support that such a feature is well known in the art (script is a batch file) and “the system of Lawson *could* use a batch file (script) as an appropriate method (see col. 14, lines 29-48).”

Applicants disagree with such a broad, unsupported contention, and further note that the “method” referred to in column 14 of Lawson is a method for transferring an event over a network. There is no mention of a “batch file” in Lawson, let alone any mention of activating, starting or running a program or script. In fact, the Office action’s use of the term “could” clearly indicates that Lawson is deficient in providing such a teaching or suggestion, and that the Office action is relying solely on applicants’ teachings in an attempt to patch up this unmistakable deficiency. Similarly, the Office action’s alleged motivation, “modifying Lawson by employing the well known batch file for notification the clients [*sic*] because it would make event [*sic*] to trigger a script as a appropriate method for notification” is not found in Lawson or any of the other prior art of record, but appears to be entirely based on applicants’ teachings. For at least these reasons, the Office action’s wholly speculative allegations cannot reasonably be used to support this claim rejection, and applicants respectfully request withdrawal of the §103(a) rejection of claim 3 based thereon, or specifically request that a reference or references, including the required motivation to combine, be provided demonstrating otherwise. See M.P.E.P. § 2144.03.

Similarly, in rejecting claims 6-8, the Office action concedes that Lawson fails to disclose that “the system event includes information related to the power state of the machine” and also fails to disclose that “the system event includes information related to

the logon state of the machine.” While that alone should be sufficient to make these claims patentable over Lawson, the Office action nonetheless contends, again without support found in the prior art of record, that these features are well known in the art and the system of Lawson *could* include information related to the power state and logon state of the machine (see col.9, lines 14-16). Applicants strongly disagree with this rejection, based wholly on such an unsupported and specious conclusion, and submit that the obviousness rejection is thus improper for a number of reasons.

First, as conceded in the Office action, Lawson provides no such teaching, suggestion or motivation to implement power state and logon state event notifications, let alone any suggestion as to how this might be accomplished, or why this might be desirable. Second, applicants submit that it is entirely unreasonable to hold that the specific “power event” and “logon event” subject matter is somehow suggested by the extremely general statement in Lawson (at col.9, lines 14-16) that an “event producer and event consumer are meant to be generic terms that are interpreted broadly. Event producer will be used to refer to a process, user, device, or other item that produces or generates an event.” Indeed, the strained reliance on such a general statement, if anything, clearly shows that instead of finding any reasonable support in the prior art, the Office action relied on the hindsight knowledge gleaned from applicants’ teachings in order to reconstruct applicants’ invention, which is impermissible by law. Again, the Office action used applicants’ teachings as a guide, as evidenced by the specious conclusion that Lawson, although silent as to applicants’ claimed subject matter, “could”

somehow be modified to reach applicants' claimed subject matter, which can only be possible by relying on applicants' teachings.

Third, like the recited subject matter itself, the Office action's wholly incorrect alleged motivation that "a person having ordinary skill in the art would have been readily recognized the desirability and advantages of modifying Lawson by employing information related to logon and power state of the event producer because the system can trigger an event related to these state of event producer" is clearly not found in Lawson nor any of the other prior art of record, but is unmistakably based entirely on applicants' teachings.

For at least these foregoing reasons, the Office action's rejection cannot properly be used to support this claim rejection, and applicants respectfully request withdrawal of the §103(a) rejection of claims 6-8, or specifically request that a reference or references, including the required motivation to combine, be provided demonstrating otherwise. See M.P.E.P. § 2144.03.

The Office action next rejected claims 2, 5, 15-17 and 23-27 under 35 U.S.C. § 103(a) as being unpatentable over Lawson in view of Gani. However, for at least the reasons set forth above with respect to claim 1, i.e., the many deficiencies of Lawson, the dependent claims 2, 5 and 15-17 are patentable over Lawson. In addition, each of these claims recite further patentable subject matter over Lawson, Gani and/or the other prior art of record, whether considered alone or in any permissible combination, as discussed below.

As generally described in the specification, in the present invention the client subscribers may comprise objects in a loosely coupled events model, each of which may

have a subscription to a method or methods of an interface. Application programs typically create a sink object to receive appropriate notifications. The subscriptions cause an event class object of the loosely coupled events database to propagate events fired on the methods to the appropriate subscribers. To this end, the client subscribers may individually expose one or more interfaces. The event class object propagates the event by calling the method of each of the subscriber's interfaces that corresponds to the method called by the publisher in that event class object's interface.

In contrast to such subject matter, Gani merely describes basic component (e.g., COM) technology, along with an early attempt at distributed COM. Gani is directed to object brokering, essentially so that remote objects can hook up with one another, e.g., for data exchange. In fact, the cited passages of Gani have nothing to do with fired system events, and thus it is not seen how Gani is even related to the system event notification service of the present invention, let alone how Gani somehow could disclose or even suggest a loosely coupled events database wherein a publisher provides events to registered subscribers via an event class object or the like that isolates the publishers from the subscribers. Indeed, in direct contrast to claims 2, 5, 15-17 and 23-27, nothing in Gani or the other prior art of record (including Lawson) discloses or suggests a loosely coupled events database and/or an event class object that receives event notifications from publishers and calls appropriate subscribers. For at least this reason, even if permissible to combine the references, (which it is not), the subject matter of these claims is not reached by the combination.

Further, applicants do not agree with the further contention in the Office action that “given the teaching of Gani, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Lawson by employing COM-database in order manage client and server objects regardless of platform or operation system.” In fact, “manag[ing] client and server objects regardless of platform or operation system” has nothing to do with the prior art’s teachings or with system event notification system based on the loosely coupled events database / event class object as recited in claims 2, 5, 15-17 and 23-27, and thus the cited art neither discloses, suggests nor provides any motivation for combining these disparate references in some way that might approach the claimed subject matter. Again, it appears as if the Office action has based its rejection of these claims entirely on the hindsight knowledge of applicants’ teachings rather than anything disclosed in the prior art, which is impermissible by law. For at least the foregoing reasons, applicants submit that the rejections of claims 2, 5, 15-17 and 23-27 are improper, and respectfully request that these rejections be withdrawn.

Next, regarding the rejection of claim 25, applicants note that the Office action is again relying on the very general statement of col.9, lines 14-16 of Lawson, along with Fig. 1, parts 1-4 (which only generally show event consumers) in an (unsuccessful) attempt to find specifically recited subject matter, namely system events received from an operating system. Nevertheless, without any specific or even related support, the Office concludes that “it is apparent that the system information as system events *could* be an operation [*sic*] system” (emphasis added). Applicants disagree, and submit that such an express or even implied teaching is not found in the prior art of record, (as again further

evidenced by the use of the term “could”), but again has been taken from applicants’ teachings, which impermissible by law. For example, nowhere does Lawson provide a single example of such an operating system provided event, how it could provide the event to the central service of the present invention, and so forth. In fact, the only teaching of operating system-provided events is found in applicants’ specification, not in Lawson or Gani. For at least the foregoing reasons, claim 25 is further patentable over the prior art of record.

Similarly, regarding the rejections of claim 26 and 27, in contrast to the statement in the Office action, simply because Lawson is connected to a network (which might be a wide area network) and receives events over the network does not in any way disclose that the *system information* includes information related to a network state, regardless of the type of network, let alone that Remote Access Services (RAS) events are received. For at least the foregoing reasons, claims 26 and 27 are further patentable over the prior art of record.

The Office action next rejected claims 10-14 and 18-22 under 35 U.S.C. § 103(a) as being unpatentable over Lawson in view of McCreery. In making the rejection, the Office action conceded that Lawson fails to show that “the central service includes a plurality of time-based caches for caching network information, and a mechanism for evaluating the caches to determine a connectivity state of a network; and the time-based caches maintain counts corresponding to network activity.” Nonetheless the Office action alleges that “these features are well known in the art and would have been obvious modification of the system disclosed by Lawson, as evidenced by McCreery.”

Applicants disagree with this broad, unsupported conclusion for a number of reasons. For example, neither Lawson nor McCreery, two very disparate references, maintain time-based (e.g., at two distinct times) caches or look at the differences between the two caches to fire network connectivity events as essentially recited in claims 10-14. The significant deficiencies of Lawson have been discussed above, while McCreery simply does not disclose or even suggest looking at the differences between time-based caches to determine network connectivity state. For at least this reason, claims 10-14 are separately patentable over any permissible combination of Lawson and McCreery.

With respect to the rejections of claims 18-22, the IP data referred to in McCreery has nothing to do with issuing an event based on whether a network destination is reachable as generally recited in claims 18-22. In fact, the various passages cited in the Office action have nothing to do with determining the reachability of a network destination. For example, col.9, lines 29-39 of McCreery (cited in the Office action) relate to decoding received TCP/IP packet header data, while col.9, lines 40-49 of McCreery (also cited in the Office action) merely describe the type of data received. Simply put, in McCreery and/or Lawson, there is simply no “mechanism for determining whether a network destination is reachable” as recited in claim 18 or “list of network destinations” as recited in claim 19. For at least this reason, claims 18 and 19 are separately patentable over any permissible combination of Lawson and McCreery

With respect to claims 20-22, applicants note that any such analyzing of received data to somehow determine the reachability of a network destination, (something not taught in McCreery) would be opposite the proactive nature of these claims, e.g., polling

to determine reachability. In fact, McCreery teaches away from this aspect of the present invention, in that McCreery teaches transparently collecting Internet data for analysis, without burdening to network resources, and is thus silent as to anything related to polling.

Moreover, the rejections of claims 20-22 are not permissible by law for another significant reason, as instead of providing some teaching or even a suggestion in a reference directed to determining network destination reachability, the Office action simply repeats applicants' claim language and speculates that certain received packet data in McCreery "*could*" somehow be used to determine network destination reachability as taught by applicants. For example, the rejection of claim 20 cites col.9, lines 40-49 of McCreery, which only generally refers to IP data, and then uses that to speculate that the received IP data *could* be somehow used in a regular polling operation to determine network destination reachability. However, McCreery is silent as to any such polling operation, as is Lawson, let alone how polling could be accomplished given the information at hand, or why it might be desirable to do so. Similarly, McCreery does not teach or suggest using DNS (Domain Name Service) name resolution to determine that an IP address is not reachable if the name of the destination is not resolvable into an (see column 12, lines 49-59), but in fact mentions using DNS for reverse querying to find an Internet address from an IP address when network activity at that address is detected. Such a rejection is also illogical, as if network activity from a network destination was being detected, it would hardly make sense to use DNS to see if that destination was reachable (which in any event McCreery fails to teach or suggest).

Further, the alleged motivation for combining these disparate references, i.e., “given the teaching of McCreery, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Lawson by employing monitoring network activity because it would reduce the traffic on the network, and customize the type of data that collected and analyzed” is wholly inadequate to support an obviousness rejection. For one, even if true, such a broad, unsupported conclusion has nothing to do with Lawson’s or McCreery’s teachings, or the present invention. Reducing network traffic would always seem to be desirable, but it is absurd to conclude that doing so serves as motivation for combining such disparate references. Similarly, “customizing the type of data that collected and analyzed” has nothing to do with Lawson or McCreery’s teachings, the claimed subject matter, or anything found in the other prior art of record, and again falls far short of the necessary motivation, explicit or otherwise, that is expressly required by law to support a §103 rejection. Indeed, if such a broad and unrelated statement is allowed to serve as an adequate motivation to combine, then it would be permissible to indiscriminately combine virtually any set of references, rendering meaningless the requirement to find some actual motivation to combine references.

In sum, considering the rejections of claims 18-22 as a whole, because the cited references are essentially silent as to anything related to the claimed subject matter, and further do not provide any legitimate motivation to combine, it is apparent that the Office action has relied solely on applicants’ teachings to guess at some way in which the references “could” be possibly modified in some way to approach applicants’ claimed subject matter. Such a hindsight reconstruction is clearly impermissible by law.

The Office action also rejected claims 28-36 under 35 U.S.C. § 103(a) as being unpatentable over Lawson in view of Gani and further in view of McCreery. For the reasons discussed above, each of these references is deficient with respect to teaching many of the aspects of the present invention that the Office action attributes thereto, and thus claims 28-36 are patentable over these references for at least the reasons set forth above. In addition, applicants note that the Office action is attempting to rely on an alarm generator of McCreery to reject claims 30, 33 and 34. However, the alarm generator is *not* an event publisher as recited in these claims, because, among other reasons, the alarm generator “includes data identifying parties to notify in the event of alarm conditions,” (see McCreery, column 8 lines 5-6), which directly teaches away from the loosely coupled events model of claim 23 on which claims 30, 33 and 34 depend. Further, in order to allege that applicants’ invention is obvious, the Office action again speculates as to what McCreery “could” do rather than what McCreery actually teaches, and thus again appears to have relied solely on applicants’ teachings to piece together the claim elements instead of relying on something taught in a reference, which is impermissible by law. Applicants also note that essentially the same inadequate and unsupportable motivation to combine is being alleged, i.e., “employing monitoring network activity because it would reduce the traffic on the network, and customize the type of data that collected and analyzed,” and thus submit that it is improper by law to combine these disparate references for the reasons discussed above.

Although the Office action (at numbered paragraph 27 thereof) indicated that claims 35 and 36 were rejected in view of a combination of Lawson, Gani and McCreery,

the Office action did not provide any details as to these rejections with respect to these three references. Instead, the Office action (at numbered paragraph 32 thereof) assembled pieces of *four* references in an attempt to reject claims 35-36 under 35 U.S.C. § 103(a), namely Lawson, Gani and McCreery and Stupek. As discussed above, most of what the Office action attributes to Lawson, Gani and McCreery is not found therein, and thus for at least this reason, claims 35 and 36 are patentable over any combination of these three references. At the same time, Stupek is directed to managing network devices, and applicants do not see (nor has the Office action shown) how Stupek (which provides no details of how IP pinging can be implemented) could be somehow combined with these other disparate references to determine network destination reachability for providing events to subscribers as generally recited in these claims. Instead the Office action merely alleges, without citing any support in the prior art, that “Given the teaching of Stupek, a person having ordinary skill in the art would have readily recognized the desirability and advantage of modifying Lawson in view of Gani and further in view of McCreery by employing the well known features of ping devices for track the devices state because it would have assured the functionally [*sic*] of managed devices in the network.” However, such an allegation neither found in nor supported by the prior art of record. Instead, it is clear that the Office action has used applicants’ teachings as a blueprint in an attempt to reconstruct applicants’ claimed invention from selected pieces of these four prior art references, which is not permissible absent some suggestion, teaching, or motivation in the prior art to do so. *See, e.g., Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1051-52, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988).

Considering the §103(a) rejections of claims 2, 3-8 and 10-36 as a whole, applicants submit that not only are the references deficient, as discussed above, but that the Office undoubtedly used impermissible hindsight to make its rejections, where a portion of applicant's disclosure and a mosaic of disparate references (four in the case of claims 35 and 36) are used in making the rejections. The use of such a prior art mosaic in a Section 103 rejection of the claims, without proper motivation, is impermissible. Proper motivation to combine the references is lacking, especially in view of the references' deficiencies and the complete absence of any legitimate motivation in the references themselves. As has been stated by the Federal Circuit:

"[A]n examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be "an illogical and inappropriate process by which to determine patentability." *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570, 38 USPQ2d 1551, 1554 (Fed. Cir. 1996).

"To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed." *In re Rouffet*, 97-1492 (Fed. Cir. 1998).

In the present case, the Office action did not find every element of the claimed invention, because the references are deficient as described above. Moreover, even if the

references could somehow be interpreted as set forth in the Office action, there is no motivation to combine the references, let alone a showing of how they could be combined to reach the claimed subject matter, or what would be achieved by such a combination. Indeed, the various alleged reasons for combining the references as set forth in the Office action are unsupported by the prior art, and generally unclear. Instead, the Office action has used improper interpretations of the references, as well as the hindsight knowledge of applicant's teachings as a guide to combine bits and pieces of earlier designs in an attempt to reach a conclusion of obviousness, which is clearly impermissible by law. See *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1462, 221 USPQ 481, 488 (Fed. Cir. 1984). Accordingly, it is respectfully submitted that the §103(a) rejections of claims 2, 3-8 and 10-36 are improper for at least this additional reason and should be withdrawn.

Lastly, regarding claims 37-43, which the Office action rejected under 35 U.S.C. § 102(e) as being anticipated by Davies, applicants submit that Davies does not, in any way, teach, or even suggest using the difference between values indicative of network activity at a first and second times to determine the state of network connectivity. Davies is directed to polling to receive replies, not tracking network activity. Notwithstanding the significant differences from these claims, claim 37 has been amended to point out that (at least) the values indicative of network activity obtained at a second time were not obtained via a polling operation, to further clarify that the claim is not directed to polling. Instead, network activity is tracked by receiving network information, from which differences over time, such as related to incoming packet counts (claim 38), outgoing packet counts (claim

39), number of errors (claim 40), or relative incoming and outgoing packet counts (claim 41), can be evaluated to determine the state of network connectivity.

The dependent claims further recite subject matter not taught or even suggested in Davies. For example, in making the rejections of claims 38, 39 and 41, the Office action refers to a “reachable packet and unreachable packet” at column 11, lines 47-54, but there is no such thing referred to in Davies, nor can applicants determine what a “reachable packet” or “unreachable packet” could possibly be, let alone from reading Davies. The registers of Davies, which appear to be what the Office action is attempting to cite against applicants, contain lists IP addresses, not packet counts or error counts as recited in claims 38-41.

Notwithstanding, the Office action alleges that “it is apparent the system disclosed by Davies compare the first and second time polling in order to determining a number of incoming and outgoing packet counts over a period of time.” This is completely incorrect, as Davies never even considers packet counts in making an evaluation. Similarly, regarding the rejection of claim 40, applicants submit that Davies does not consider a number of errors, as discussed above, and in fact Davies does not even mention the term “error” or “error count,” let alone its usage as recited in the claim.

Anticipation under 35 U.S.C. § 102 requires the disclosure in a single prior art reference of each element of the claim under consideration, and each element must be arranged as in the claim. Davies does not teach or suggest using the difference between values indicative of network activity at a first and second times to determine the state of network connectivity as essentially recited in claims 37-43. For at least the above reasons,

Davies fails to meet the requirements for supporting a §102 rejection of these claims, and applicants respectfully request reconsideration and withdrawal of the rejections of claims 37-43 based on Davies.

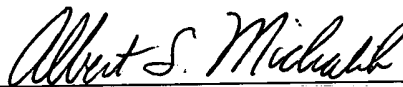
CONCLUSION

In view of the foregoing remarks, it is respectfully submitted that claims 1-43 of the present application are patentable over the prior art of record, and that the application is in good and proper form for allowance. A favorable action on the part of the Examiner is earnestly solicited.

If in the opinion of the Examiner a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney at (425) 653-3520.

Signed in Bellevue, in the County of King, and State of Washington, September 10, 2001.

Respectfully submitted,



Albert S. Michalik, Reg. No. 37,395
Attorney for Applicants
Michalik & Wylie, PLLC
14645 Bel-Red Road
Suite 103
Bellevue, Washington 98007
(425) 653-3520 (telephone)
(425) 653-3603 (facsimile)

APPENDIX A

(marked up copy of the claims amended herein)

1. (Amended) A system for providing notifications of computer system events to clients, comprising, a central service [for receiving] configured to monitor for system events including at least one system event corresponding to whether network connectivity has changed state and [for firing] to fire event notifications in response thereto, including at least one event notification when a network connection is established, a registration mechanism for clients to register for notification of one or more types of events, including at least one client registered for network connectivity event notification, and a distribution mechanism [for communicating] that communicates a fired event notification to each client registered for notification thereof based on the type of event notification.

2. (Amended) The system of claim 1 wherein the registration mechanism and distribution mechanism are incorporated in a loosely coupled events database including an event class object, and wherein the central service is a publisher and each client is a subscriber.

5. (Amended) The system of claim 3 wherein the registration mechanism and distribution mechanism are incorporated in a loosely coupled events database including an event class object.

10. (Amended) The system of claim 1 wherein the central service includes a plurality of time-based caches for caching network information, and a mechanism for evaluating differences between at least two of the caches to determine a connectivity state of a network.

13. (Amended) The system of claim 12 wherein the mechanism for evaluating the caches determines that the connectivity state of the network is true if the incoming packet counts have increased based on at least one difference in the packet counts between at least two of the caches.

14. (Amended) The system of claim 12 wherein the mechanism for evaluating the caches determines that the connectivity state of the network is false if the outgoing packet counts have increased and the incoming packet counts have not increased based on at least one difference in the packet counts between at least two of the caches.

15. (Amended) The system of claim 1 wherein the client includes a COM object, and the firing of an event results in a call by an event class object to a method of the COM object.

23. (Amended) A computer-readable medium having computer-executable instructions for performing steps comprising:

- a) receiving system information at a central service;

- b) publishing an event notification in response thereto, the event notification having an event type associated therewith;
- c) receiving the event notification at an event class object of a loosely coupled events database;
- d) matching the event notification with at least one client that has subscribed for event notification based on the type of event; and
- e) communicating the event notification via the event class object to each client that has subscribed therefor.

26. (Amended) The computer-readable medium of claim 23 wherein the system information includes information related to a network state.

37. (Amended) A method for providing information on a state of network connectivity, comprising [the steps of], maintaining values indicative of network activity at a first time, obtaining values indicative of network activity at a second time by receiving the values without polling therefor, evaluating the differences between the values at the first time and the second time to determine the state of network connectivity, and selectively outputting the state of network connectivity.